SONY

CAMERA ADAPTOR

YS-W150
YS-W150P

SERVICE MANUAL

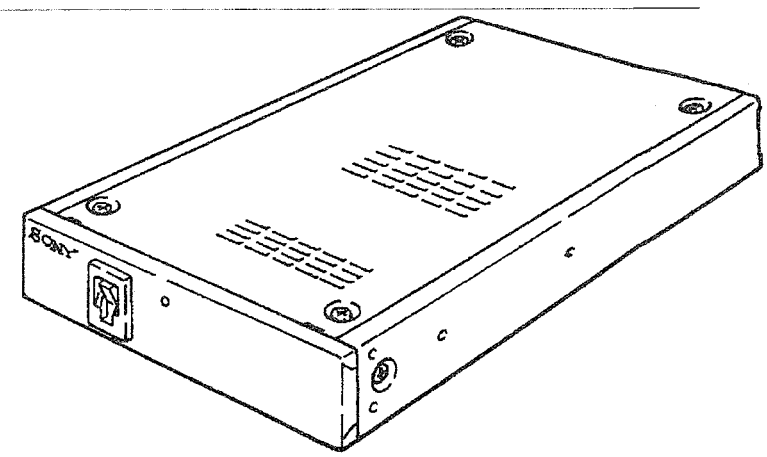


TABLE OF CONTENTS

SECTION 1 OPERATION

Features 1-1
Precautions 1-1
Location and Function of Parts and Controls 1-2
Connections 1-3
Specifications 1-5

SECTION 2 THEORY OF OPERATION

2-1. CN-1125 Board 2-1
2-2. AC-173 Board 2-1
2-3. PS-376 Board 2-1

SECTION 3 ELECTRICAL ADJUSTMENT

3-1. Clock Frequency Adjustment 3-1
3-2. External Sync Adjustment 3-1
3-3. LL mode Phase Adjustment 3-1

SECTION 4 DIAGRAM

4-1. BLOCK DIAGRAM 4-1
4-2. MOUNTING DIAGRAMS 4-4
4-3. SCHEMATIC DIAGRAM 4-7
4-4. SEMICONDUCTOR PIN ASSIGNMENT... 4-11

SECTION 5 REPAIR PARTS

5-1. EXPLODED VIEW AND PARTS LIST 5-1
5-2. ELECTRICAL PARTS LIST 5-3

SAFETY RELATED COMPNENT WARNING

Components identified by shading and ⚠ marked on the Schematic diagrams and parts list are critical to safe operation. Replace these components with SONY prats whose part numbers appear as shown in this manual or in supplements pubshed by SONY.

(For US model)

SAFTY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

Check the metal trim, "metallizes" knobs, screws, and all other exposed metal parts for AC leakage.
Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers).
Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

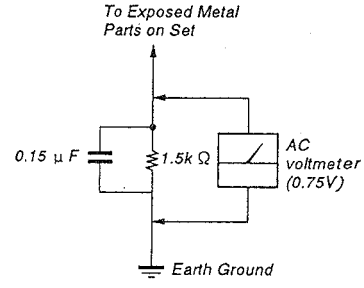


Fig. A. Using an AC voltmeter to check AC leakage.

SECTION 1
OPERATION

Features

The YS-W150/150P camera adaptor can be connected to any Sony SSC-series camera with multiplex transmission capability or the DXC-107A/107AP video camera module, providing it with power and an external synchronization signal while also transmitting the video output signal from the camera to a monitor. The YS-W150 is compatible with above stated SSC-series cameras and the DXC-107A video camera module; the YS-W150P is compatible with above stated SSC-series cameras and the DXC-107AP video camera module.

- Only a single 75-ohm coaxial cable is needed to connect to the camera. This cable carries the power supply, synchronization signal and video output signal.
- The unit has a built-in cable compensation circuit, which automatically switches the video signal compensation level among three values, depending on the length of the cable.
- When using a number of cameras, you can use the video synchronization signal supplied from the first camera to synchronize all the other cameras in the system.
- The built-in line lock function is useful when synchronizing a number of cameras.

Precautions

Power supply

Be sure to operate the camera adaptor according to the power requirements outlined under "Specifications" on page 1-5.

Foreign objects

Be careful not to spill liquids, or drop any flammable or metal objects into the body of the unit.

Operating and storage locations

Avoid operating or storing the unit in the following locations.

- Extremely hot or cold places (operating temperature: –10°C to +50°C [14°F to 122°F])
- In direct sunlight for long periods, or close to heating equipment
- Damp or dusty places
- Where it is exposed to rain
- Locations subject to strong vibration
- Close to generators producing strong magnetism
- Close to generators producing powerful electromagnetic radiation, such as radio or TV transmitters

Care

- Clean the cabinet with a soft, dry cloth. If it is very dirty, use a cloth dampened with a small quantity of neutral detergent, then wipe dry.
- Avoid the use of volatile solvents such as alcohol, benzene, and thinners. They may damage the surface finish, or impair the operation of the unit.

Ventilation

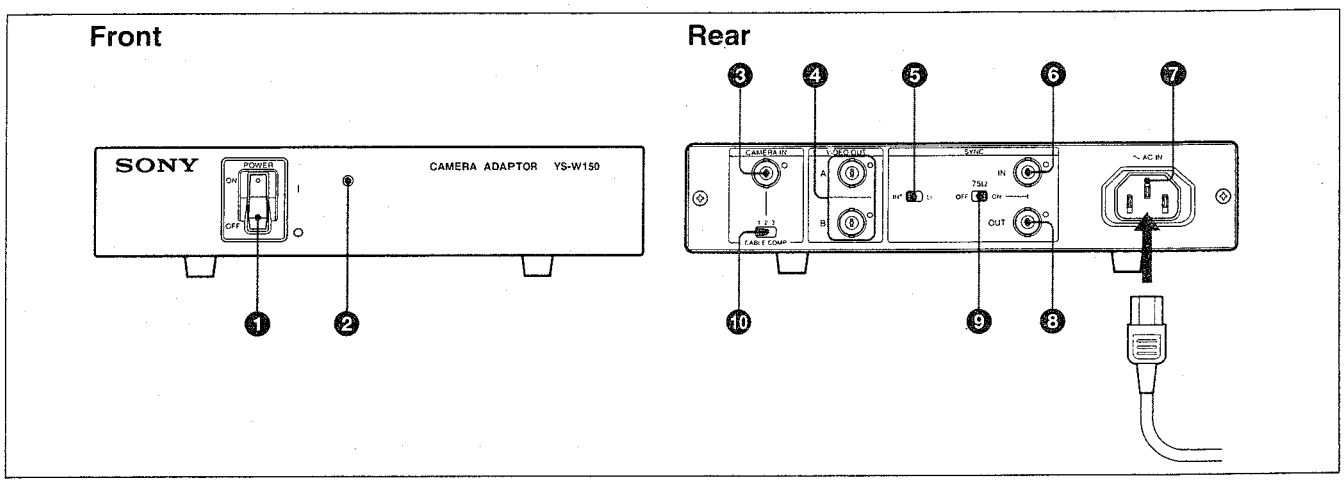
Do not wrap the unit in a cloth, etc., during operation. This may cause the internal temperature to rise excessively and the camera adaptor to malfunction.

Miscellaneous

- Be careful not to spill water or other liquids on the unit or allow combustible or metallic objects inside the body. If used with foreign objects inside, the unit is liable to fail or cause a fire or an electric shock.
- If the product is transported or shipped, repack it as originally packed at the factory, or in materials equal in quality.

In the event of any problems with the operation of the camera adaptor, contact your Sony service representative.

Location and Function of Parts and Controls



❶ POWER switch
Switches the power on and off.

❷ Power indicator
Indicates whether the power is switched on or off.

❸ CAMERA IN connector (BNC-type)
Connects to the DC IN.VS IN/VIDEO OUT connector of any SSC-series camera with multiplex transmission capability or the DXC-107A/107AP video camera module.

❹ VIDEO OUT A and B connectors (BNC-type)
Connect to the video input connector of a video monitor, and output the video signal input to the CAMERA IN connector ❸.

❺ INT/LL switch
The LL (line lock) setting locks the line frequency, which is useful when synchronizing a number of cameras. To be able to make changes manually when there is no video synchronization signal, use the INT (internal) setting.

Note

The LL (line lock) setting is not compatible with the DXC-107A/107AP video camera module. When using this camera, set this switch to INT (internal).

❻ SYNC IN connector (BNC-type)
Inputs an external synchronization signal (or video sync signal) for camera synchronization. The signal is input unaltered, regardless of the INT/LL switch setting.

❼ AC IN connector
Connects to a 120 V AC outlet (YS-W150 only) or a 220 – 240 V AC outlet (YS-W150P only).

❽ SYNC OUT connector (BNC-type)
Outputs the synchronization signal that is input to the SYNC IN connector ❻ without altering it.

❾ 75Ω (ON/OFF) switch
Controls the 75-ohm termination of the SYNC IN connector.
- When using the SYNC IN connector only, set this switch to ON.
- When using the SYNC IN and SYNC OUT connectors, set this switch to OFF.

Note

If you are using neither the SYNC IN nor SYNC OUT connector, set the switch to ON.

❿ CABLE COMP (1/2/3) switch
Compensates for signal loss in the cable connection to the camera. Set the switch depending on the cable type and length according to the following table.

When using SSC-series cameras

Switch setting / Cable type	1	2	3
RG-59B/U (3C-2V)	max. 100 m (328 ft.)	max. 200 m (656 ft.)	max. 300 m (984 ft.)
RG-6A/U (5C-2V)	max. 160 m (524 ft.)	max. 330 m (1082 ft.)	max. 500 m (1640 ft.)
RG-11A/U (7C-2V)	max. 200 m (656 ft.)	max. 400 m (1312 ft.)	max. 600 m (1968 ft.)

When using the DXC-107A/107AP camera

Switch setting / Cable type	1	2
RG-59B/U (3C-2V)	max. 100 m (328 ft.)	——
RG-6A/U (5C-2V)	max. 160 m (524 ft.)	max. 300 m (984 ft.)

Notes
- If you connect a camera to this unit after switching the power on, the camera will not operate. Be sure to complete connections before switching the power on.
- If you switch the power off and want to switch it back on, wait three or four seconds before doing so.

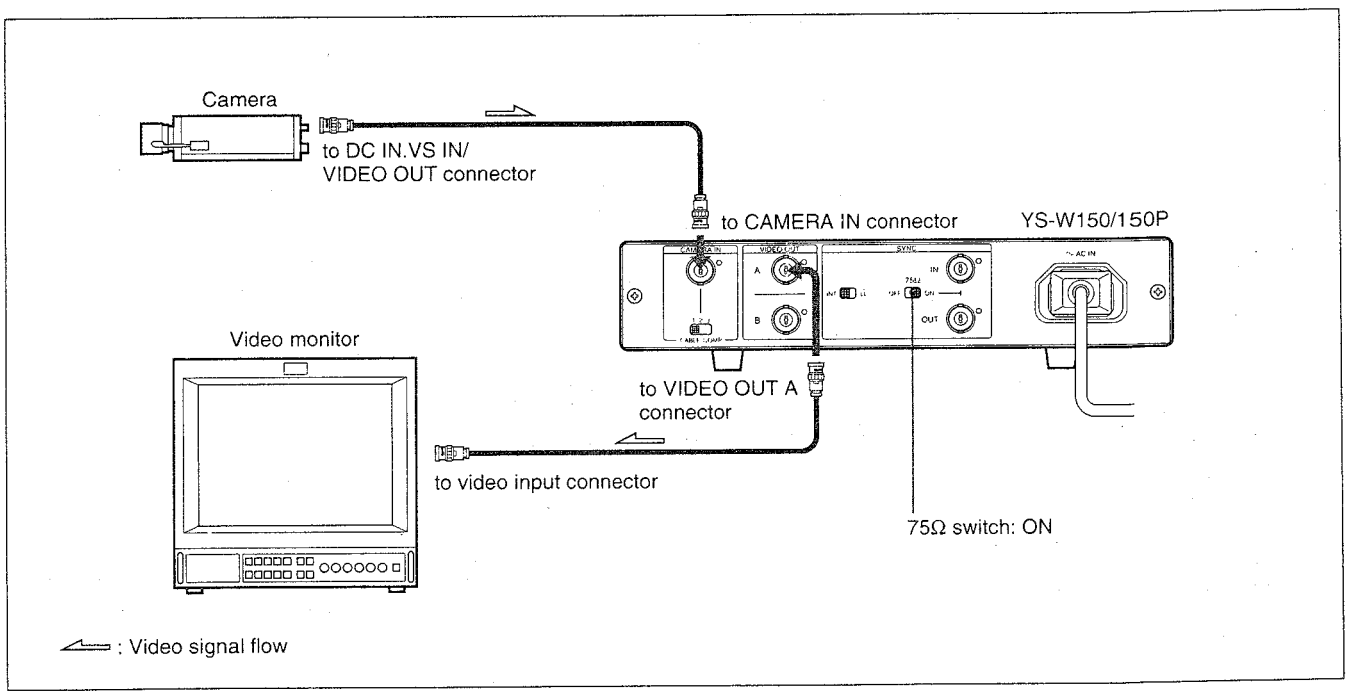
Connections

Notes on Connections

- This unit will only operate when connected to a Sony SSC-series camera with multiplex transmission capability or the DXC-107A/107AP video camera module. When making the connections, refer also to the operation manual for the connected video camera module.
- Turn off the power to all the equipment while making the system connections. If you connect a camera to this unit after switching the power on, the camera will not be supplied with power.
- The cable connecting this unit to the video camera carries the power supply and synchronization signal in addition to the camera video output signal. It is therefore not possible to connect a booster or other device along the cable.

Operating with a Single Camera and Single Monitor

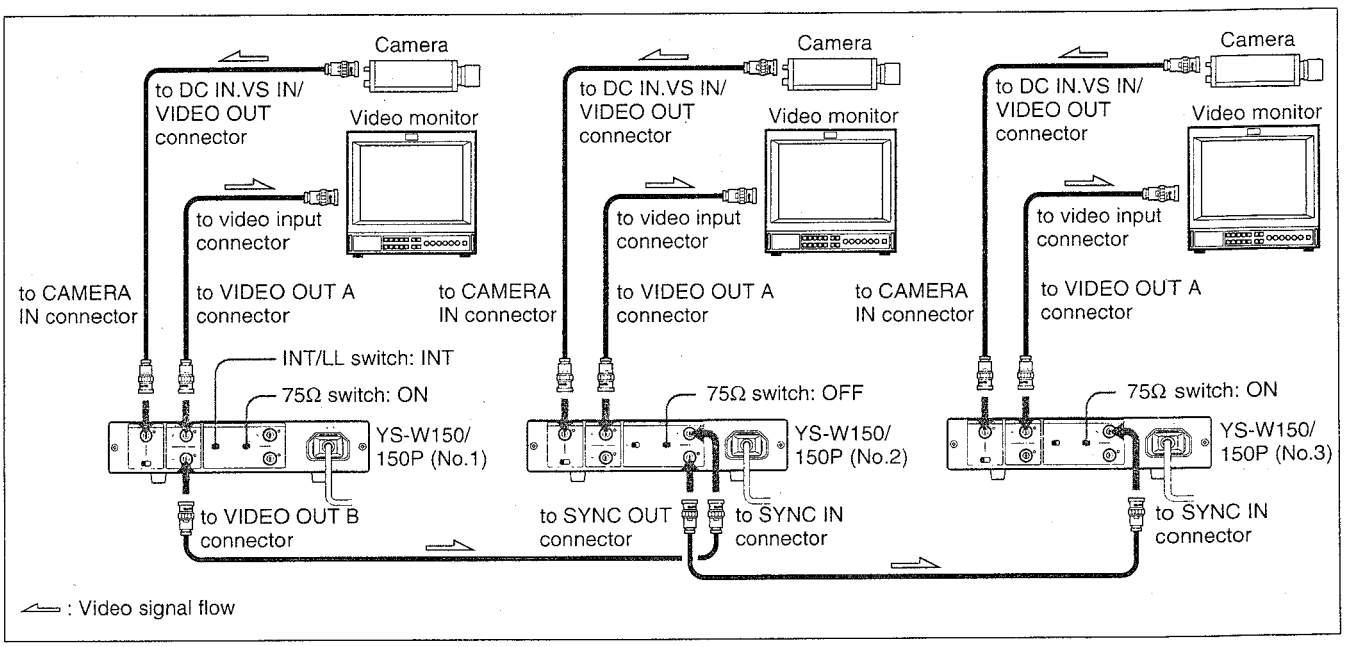
Make all the connections before setting the POWER switch of this unit to ON.



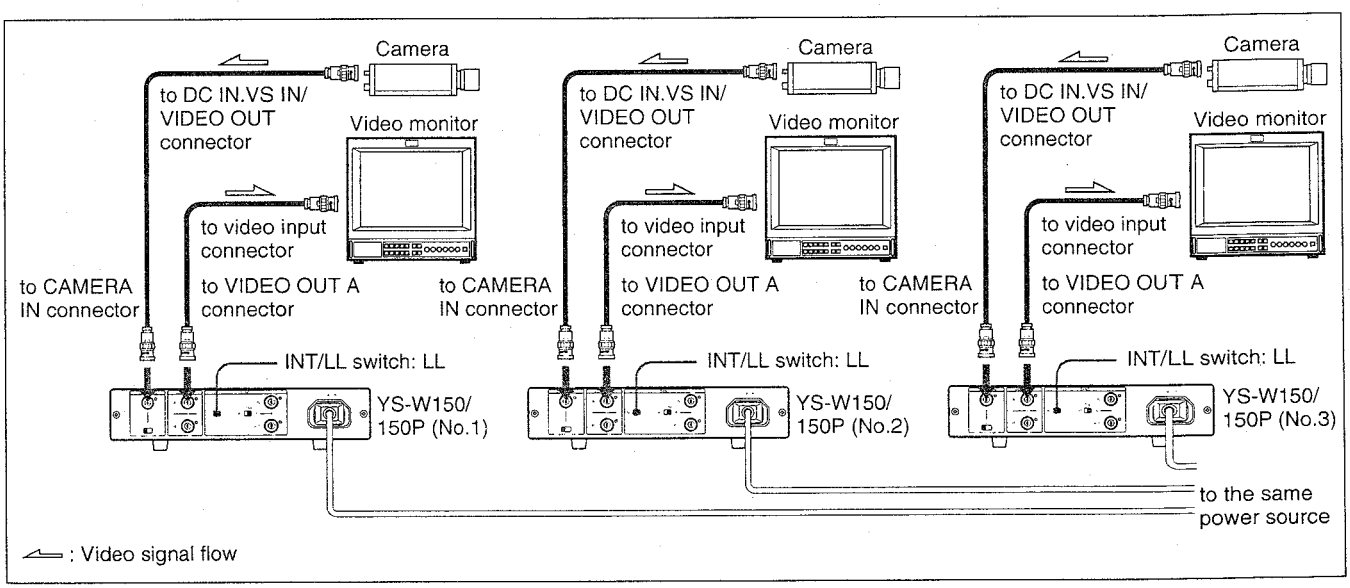
These examples show systems consisting of three cameras.

Using the INT Setting to Connect a Number of Camera Adaptors

The video synchronization signal supplied from the camera connected to the first camera adaptor can be used for synchronizing the other cameras.



Using the LL Setting to Connect a Number of Camera Adaptors



Note: This setting is not compatible with the DXC-107A/107AP video camera module.

Specifications

Power supply	YS-W150 : 120 V, 60 Hz YS-W150P: 220 to 240 V AC, 50 Hz
Power consumption	15 W
Input connectors	CAMERA IN (BNC) Connect only to a Sony SSC-series camera with multiplex transmission capability or the DXC-107A/107AP video camera module. SYNC IN (BNC) Composite sync signal: 4 Vp-p, 75 ohms terminated VS (video/sync): 1 Vp-p, 75 ohms terminated VBS (video/burst/sync): 1 Vp-p, 75 ohms terminated
Output connectors	VIDEO OUT A and B (BNC) Composite video signal: 1 Vp-p, 75 ohms terminated SYNC OUT (BNC) For loop-through output of the signal input to SYNC IN
Operating temperature	–10°C to +50°C (14°F to 122°F)
Dimensions (w/h/d)	212 × 52 × 345 mm (8 3/8 × 2 1/16 × 13 5/8 inches)
Mass	Approx. 1.9 kg (4 lb 3 oz)
Accessories supplied	Operation Instructions (1) AC power cord (1)

Design and specifications are subject to change without notice.

SECTION 2
THEORY OF OPERATION

2-1. CN-1125 Board

Mounted with input/output terminals and user control switches.

2-2. AC-173 Board

Mounted with a filter for preventing unrequired radiation of the AC line.

2-3. PS-376 Board

(1) Video signal processor

After the video signal input from camera is DC cut by C301, it is terminated by R105 (75 Ω), and the sync signal of the camera controller is canceled by the differential amplifier (IC101).

The signal is then clamped by Q101, amplified by IC102, passed through the buffer, and output to VIDEO OUT A and B terminals.

(2) Cable compensation circuit

The gain and frequency characteristics of IC102 are switched in three levels by Q102, Q103, and Q104 according to the cable length.

(3) 28.5V REG and protection circuit

A 28.5V output which has been stabilized at high impedance by Q304 is supplied to the camera together with the sync signal from the 31V switching power supply.

The current flowing to the camera is voltage-converted and detected by Q305. When excessive-load or no-load, the flip-flop (Q306, Q307) is controlled by the comparator IC301, Q302 is cut-off by Q312, and the power supplied to the camera is stopped.

The LED will be dimly lit by the flip-flop at this time.

The flip-flop during POWER ON is regulated by C309 and Q308.

The operating points in excessive load and no load are as follows.

Excessive load: Above approx. 330 mA

No load: Below approx. 50 mA

(4) Power supply

DC31V, 9V, and 5V are made from the commercial-use power supply.

The AC power supplied from the AC173 board through the POWER switch is full-wave rectified by D501, passed through the start resistor (R503 and R519), and supplied to the switching transistor Q502 base to turn it ON.

Next, the current flows to the primary side of the power supply transformer T501, a voltage is generated in the base winding, and these currents are added to the Q502 base via Q503, R504, and R518 to increase the collator current.

As the base current is limited by R504 and R518, the collator current saturates at a certain level. At this time, the base winding voltage decreases, the collator current decreases, and turns OFF.

At the same time, a voltage proportionate to the winding ratio is generated at the secondary side of T501 to charge the C510 and C513 capacitor. When charge completes, Q502 turns ON again, and this cycle is repeated.

The 31V output voltage is resistance-divided, and compared with the shunt regulator IC503. The results indicate the changes in the base current of the photo coupler PH501. When 31V is high, this base current of PH501 increases and turns ON, the emitter current of the control transistor Q501 increases, and the Q501 base current decreases.

As a result, the Q502 saturation current decreases and the secondary side voltage drops.

The secondary side 12V is stabilized at 9V by the series regulator IC501, and further stabilized to 5V from 9V by IC204.

Before full-wave rectification, the AC power is input to PH503 via R527 to detect the open collector output as a V PULSE for L.L.

(5) Synchronization block

1) INT

The 14 MHz basic clock input to the timing generator IC212 becomes the 14 MHz crystal OSC output during INT (INT/LL=INT) after the IC216 output becomes "L", Q202 turns ON, and 5V is supplied to IC209.

2) External synchronization (Regardless of the INT/LL SW, this mode has the priority)

The external sync signal passes through the buffer Q205 and is input to IC201 to output the sync signal and HD.

The VD signal is input to the VR pin of IC212 via the low pass filter. Because HD is "H", Q202 turns OFF regardless of the INT/LL SW, and 5V is not supplied to IC209. The 14 MHz crystal OSC is not oscillated.
On the other hand, Pin 2 of IC206 becomes "H", the 14 MHz VCO is oscillated and input to the basic clock of IC212.
The HD signal is used as the EXT signal of IC212 to manage the sync mode.
The HD signal is further sent to the analog switch IC215 while the HD output of IC212 is input to IC215 via the Schmidt trigger IC205. When the EXT signal is "H", these two HD signals become the IC215 output and are phase-compared at IC202. The result of the phase comparison output becomes the VCO control voltage integrated to the DC value by the low pass filter.

3) When LL (INT/LL SW=LL)
The 14 MHz basic clock input to IC212 is the same VCO as the external sync.
The V PULSE for LL is sent to IC215 via the monostable multi vibrator IC211. On the other hand, the VD output of IC212 is input to IC215 via IC214. When the EXT signal is "L", these two signals become the output of IC215, and are phase-compared by IC202. The result of the phase comparison output becomes the VCO control voltage integrated to the DC value by the low pass filter.

4) VS output
The VS signal is sent to the CN-1125 board by resistance-dividing the IC212 output.

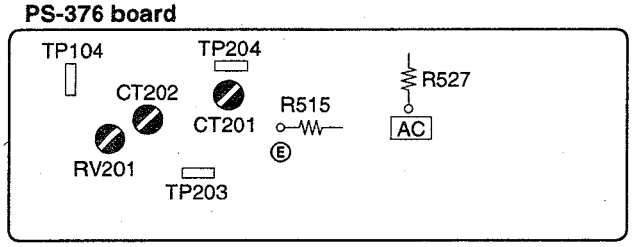
SECTION 3
ELECTRICAL ADJUSTMENT

Required Equipment

- Dual Trace Oscilloscope
- Frequency Counter
- Digital Voltmeter
- Video Signal Generator
- Sony SSC-series video camera

Adjustment Location

PS-376 board



3-1. Clock Frequency Adjustment

Equipment: Frequency counter
Test point: TP203, (GND: R515 "Ⓔ" marking side)
Adjustment point: CT202
Specfication: 14.31818 MHz ± 50 Hz (YS-W150)
14.1875 MHz ± 50 Hz (YS-W150P)

Preparation:

1) Connect a camera to the CAMERA INPUT.
2) Set the INT/LL switch to INT.

3-2. External Sync Adjustment

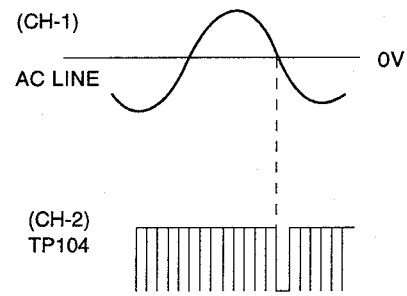
Equipment: Digital Voltmeter
Test point: TP204
Adjustment point: CT201
Specfication: 2.7 ± 0.1 Vdc

Preparation:

Input the external sync signal to the SYNC IN.

3-3. LL mode Phase Adjustment

Equipment: Oscilloscope
Test point: R527 "AC" marking side (CH-1)
Connect nothing to the GND of the CH-1 probe.



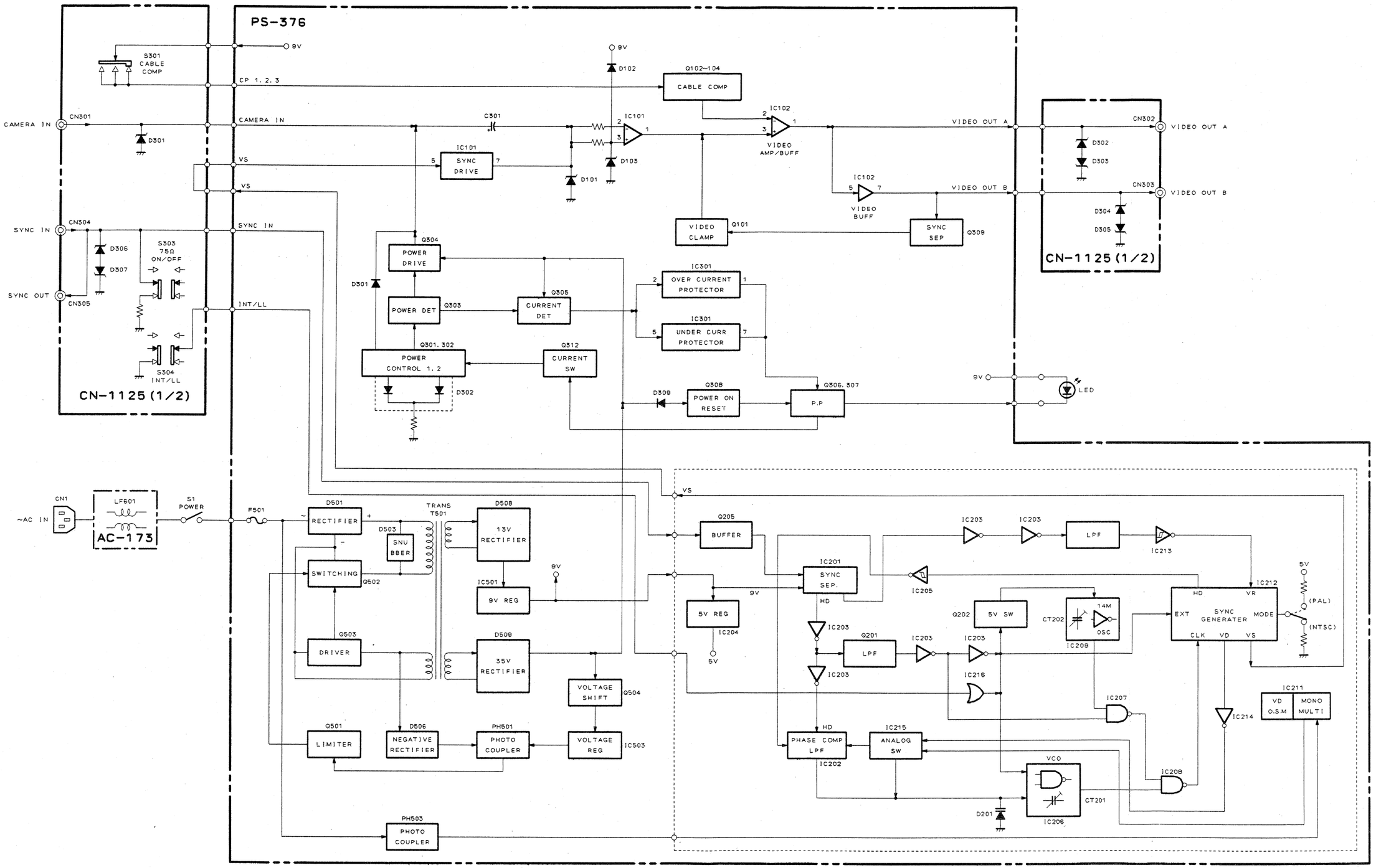
TP104 (CH-2)

Adjustment point: RV201
Adjustment method:

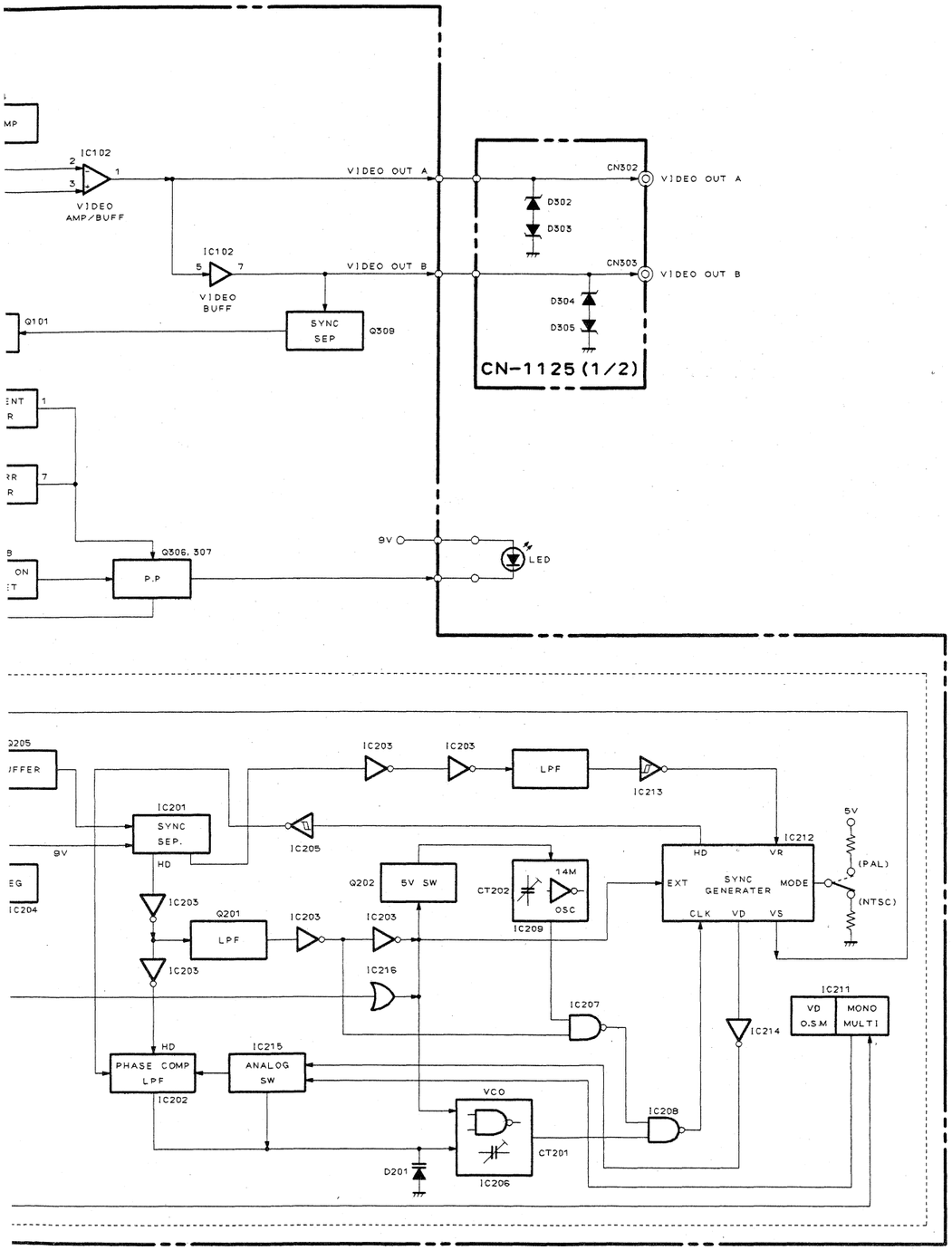
1) Set the INT/LL switch to LL
2) Adjust RV201 so thet the CH-2 pulse is positioned at the cross point of the CH-1 waveforme as follows.

SECTION 4
DIAGRAM

4-1. BLOCK DIAGRAM



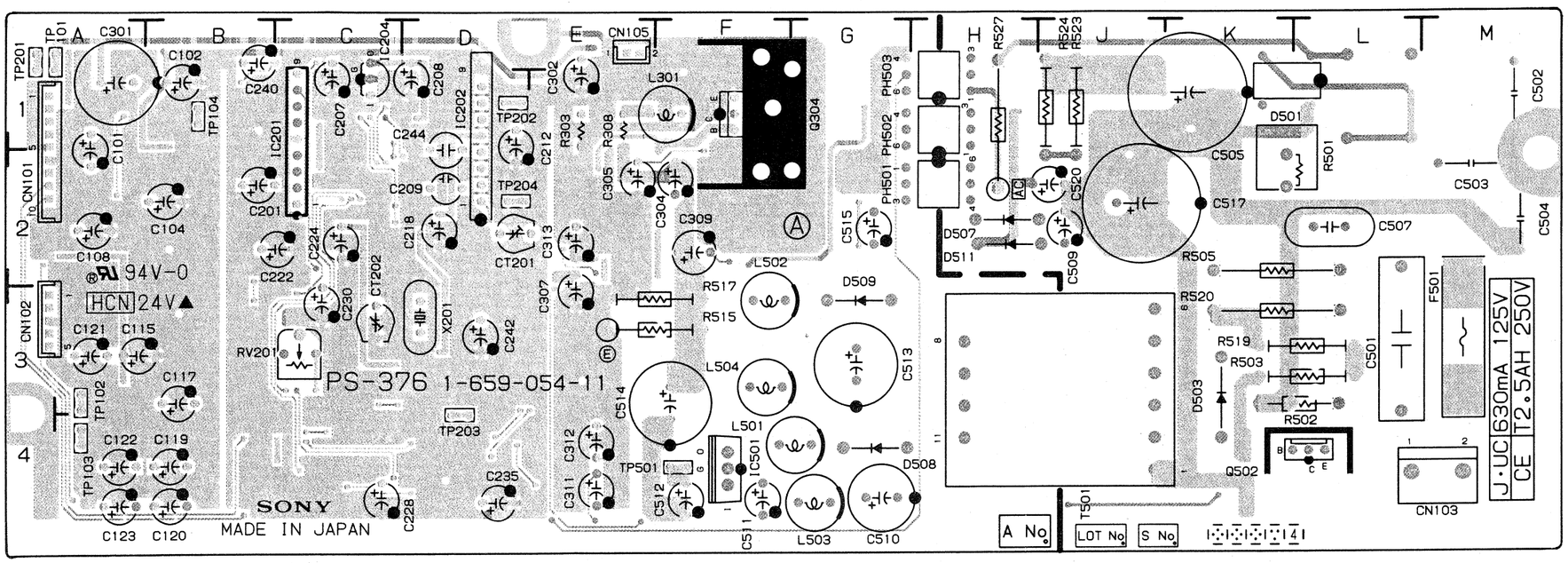
4-1 4-2



YS-W150/W150P

4-2. MOUNTING DIAGRAMS

PS-376 BOARD –A Side–



CN101 A-2
CN102 A-3
CN103 M-4
CN105 E-1

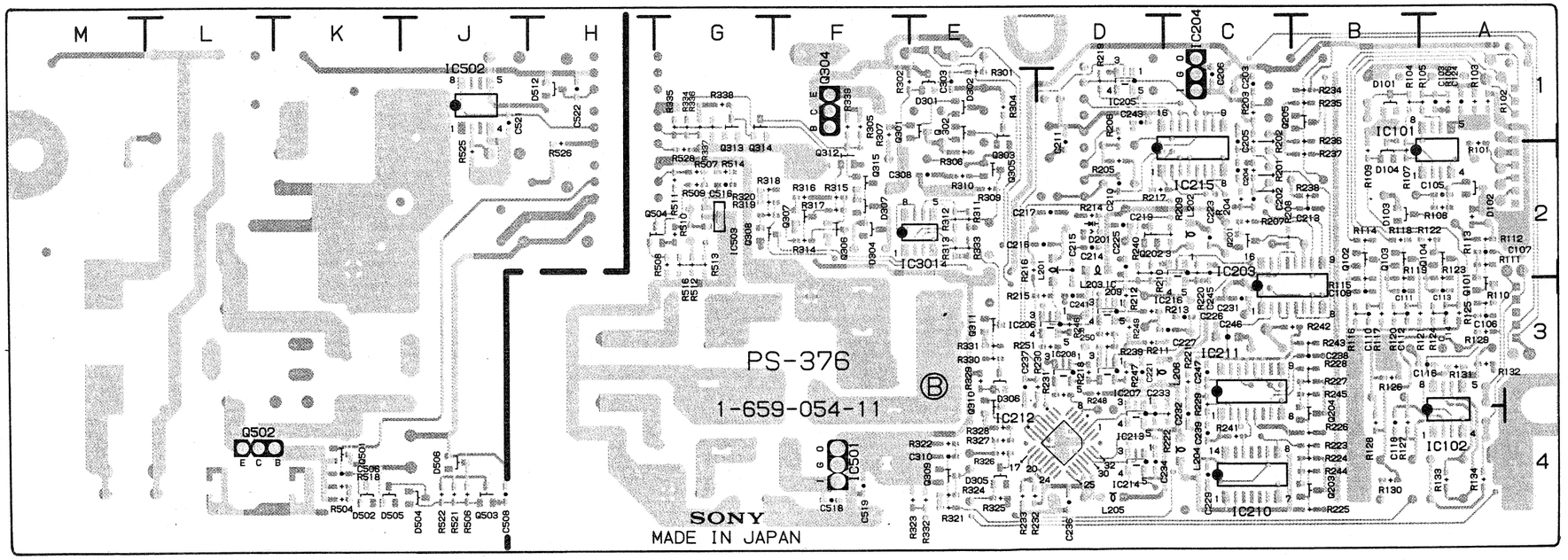
D501 K-1
D503 K-3
D507 H-2
D508 G-4
D509 G-3
D511 H-2

IC201 C-1
IC202 D-1

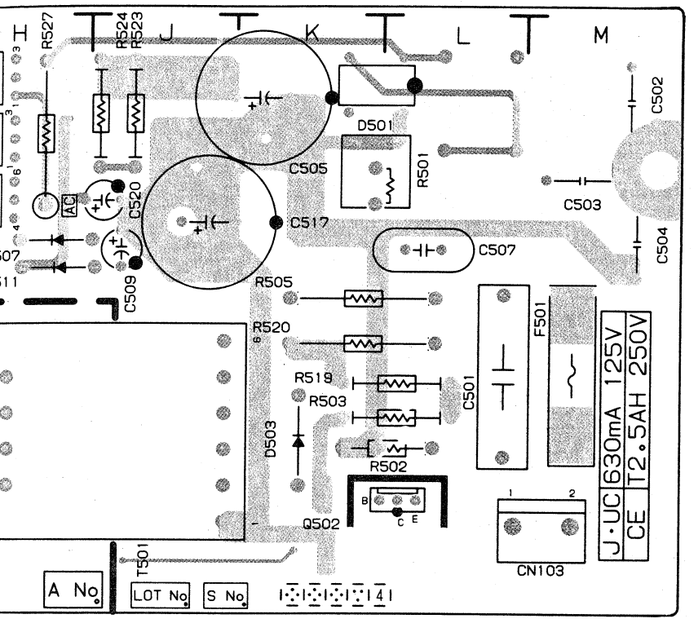
Q304 G-1

X201 D-3

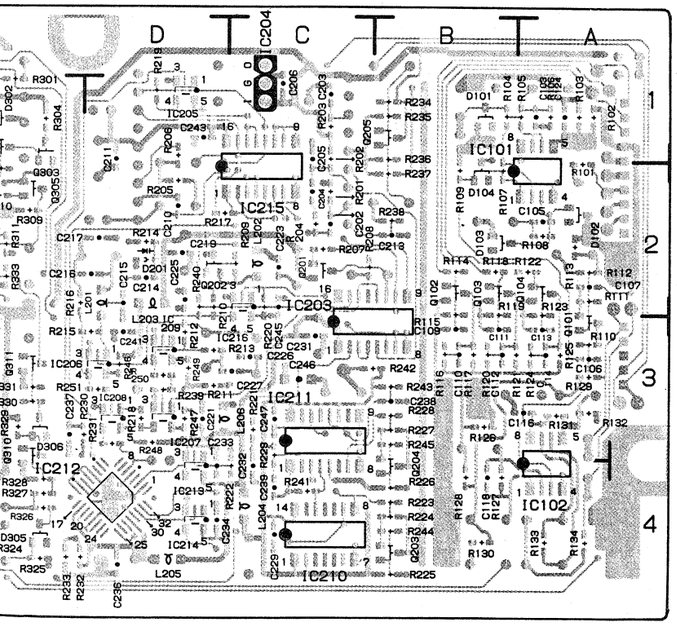
PS-376 BOARD –B Side–



D101	B-1	IC207	D-3	Q204	B-4
D102	A-2	IC208	D-3	Q205	C-1
D103	B-2	IC209	D-3	Q301	F-1
D104	B-2	IC210	C-4	Q302	E-1
D201	D-2	IC211	C-3	Q303	E-2
D301	E-1	IC212	E-4	Q304	F-1
D302	E-1	IC213	D-4	Q305	F-2
D304	F-2	IC214	D-4	Q306	F-2
D305	E-4	IC215	C-2	Q307	F-2
D306	E-3	IC216	C-3	Q308	G-2
D307	F-2	IC301	E-2	Q309	E-4
D502	K-4	IC501	F-4	Q310	E-3
D504	J-4	IC502	J-1	Q311	E-3
D505	K-4	IC503	G-2	Q312	F-2
D506	J-4				
D512	H-1	Q101	A-3	Q313	G-1
IC101	B-1	Q102	B-2	Q314	G-1
IC102	A-4	Q103	B-2	Q315	F-2
IC203	C-2	Q104	A-2	Q501	K-4
IC204	C-1	Q201	C-2	Q502	L-4
IC205	D-1	Q202	D-2	Q503	J-4
IC206	E-3	Q203	B-4	Q504	G-2

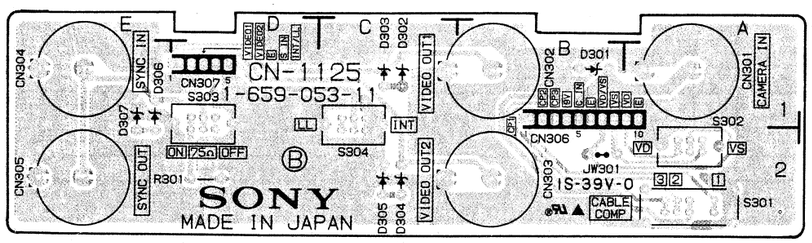


CN101	A-2				
CN102	A-3				
CN103	M-4				
CN105	E-1				
D501	K-1				
D503	K-3				
D507	H-2				
D508	G-4				
D509	G-3				
D511	H-2				
IC201	C-1				
IC202	D-1				
Q304	G-1				
X201	D-3				



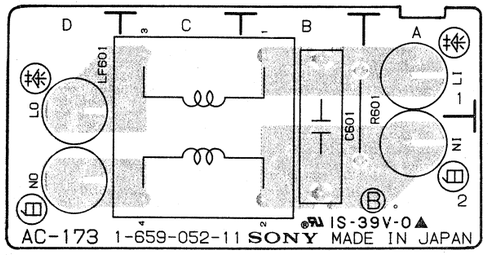
D101	B-1	IC207	D-3	Q204	B-4
D102	A-2	IC208	D-3	Q205	C-1
D103	B-2	IC209	D-3	Q301	F-1
D104	B-2	IC210	C-4	Q302	E-1
D201	D-2	IC211	C-3	Q303	E-2
D301	E-1	IC212	E-4	Q304	F-1
D302	E-1	IC213	D-4	Q305	F-2
D304	F-2	IC214	D-4	Q306	F-2
D305	E-4	IC215	C-2	Q307	F-2
D306	E-3	IC216	C-3	Q308	G-2
D307	F-2	IC301	E-2	Q309	E-4
D502	K-4	IC501	F-4	Q310	E-3
D504	J-4	IC502	J-1	Q311	E-3
D505	K-4	IC503	G-2	Q312	F-2
D506	J-4				
D512	H-1	Q101	A-3	Q313	G-1
IC101	B-1	Q102	B-2	Q314	G-1
IC102	A-4	Q103	B-2	Q315	F-2
IC203	C-2	Q104	A-2	Q501	K-4
IC204	C-1	Q201	C-2	Q502	L-4
IC205	D-1	Q202	D-2	Q503	J-4
IC206	E-3	Q203	B-4	Q504	G-2

CN-1125 BOARD –B Side–

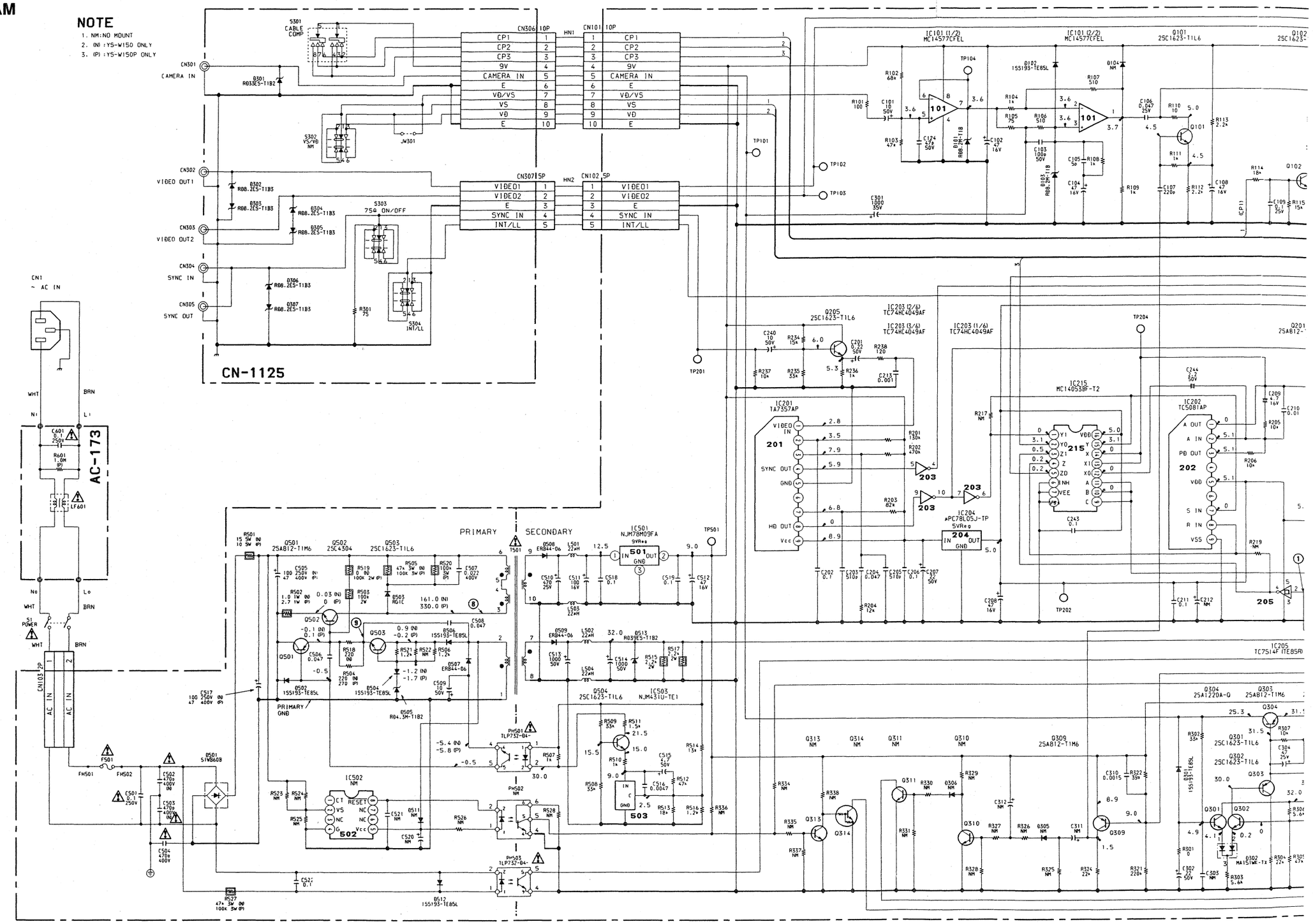


CN301	A-1	D301	B-1
CN302	B-1	D302	C-1
CN303	B-2	D303	C-1
CN304	E-1	D304	C-2
CN305	E-2	D305	C-2
CN306	B-2	D306	E-1
CN307	D-1	D307	E-1

AC-173 BOARD –B Side–



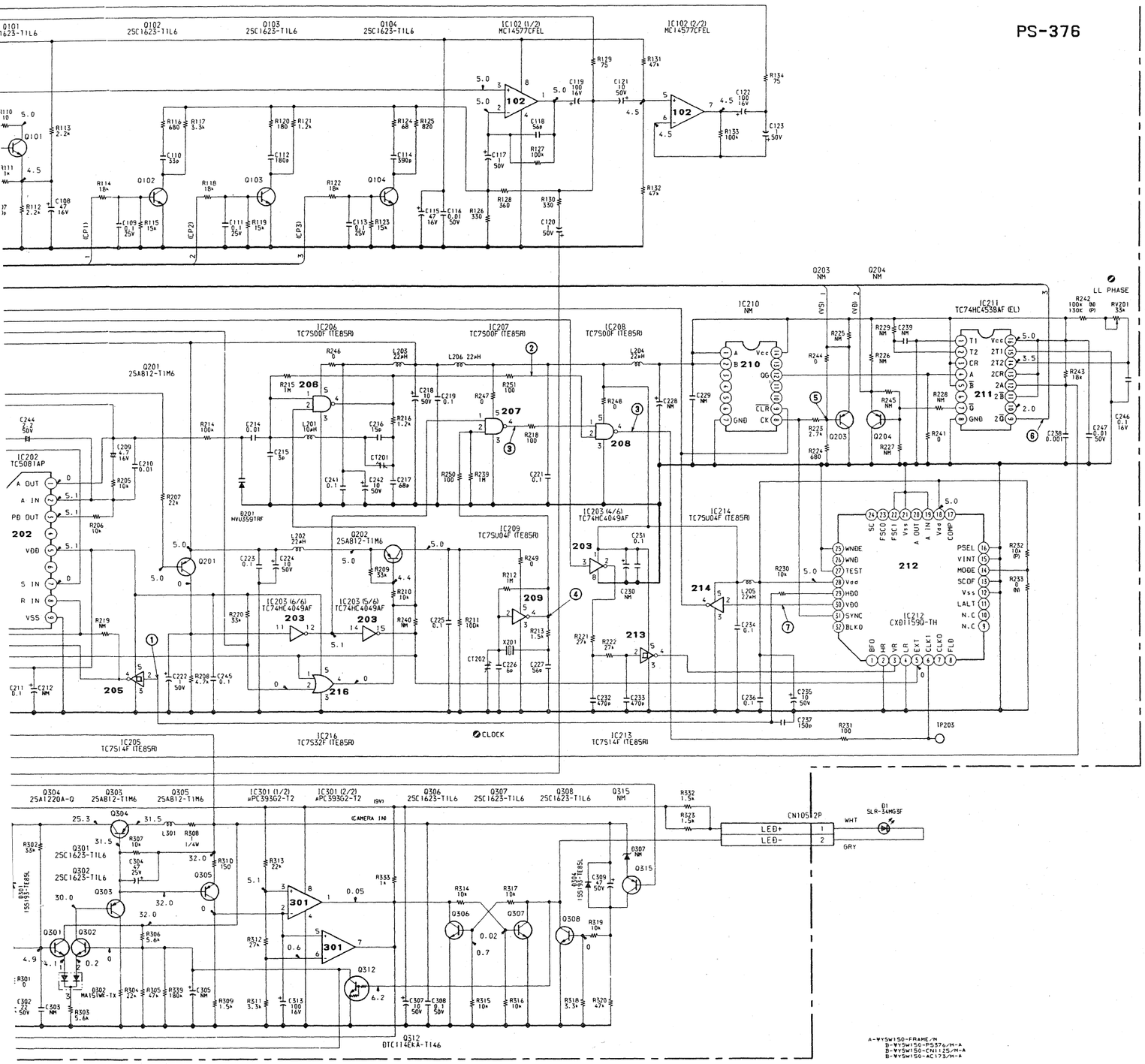
4-3. SCHEMATIC DIAGRAM

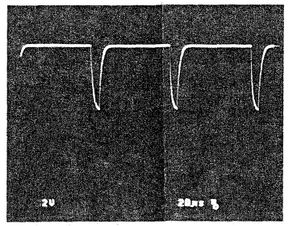


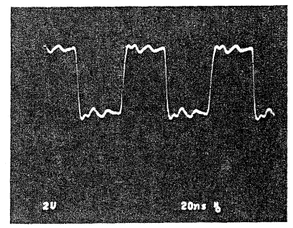
4-7 4-8

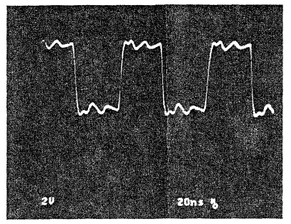
A B C D E F G H

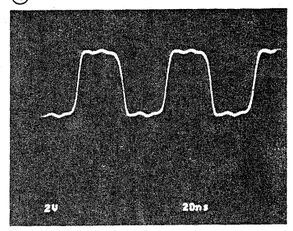
PS-376

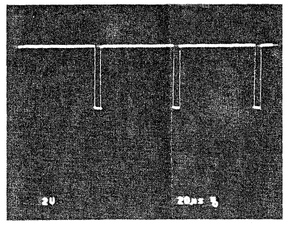


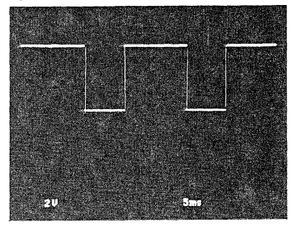
① 

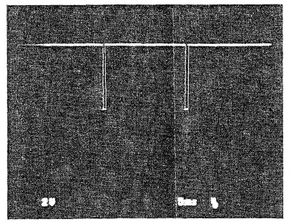
② (LL mode) 

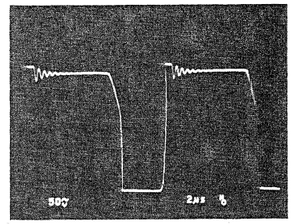
③ (INT mode) 

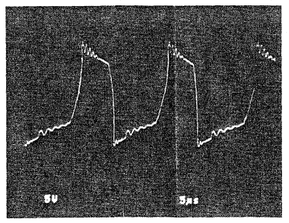
④ 

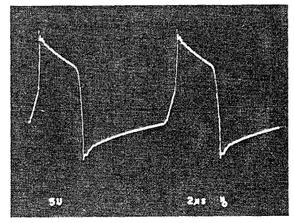
⑤ 

⑥ 

⑦ 

⑧ (YS-W150) 

⑨ (YS-150P) 

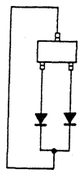
⑨ (YS-W150) 

4-4. SEMICONDUCTOR PIN ASSIGNMENT

等価回路はICメーカーのData Bookに従いました。
The circuit diagram of each IC is obtained from the IC data book published by the manufacturer.

1SS184

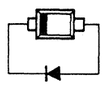
TOP VIEW



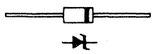
1SS193

HVU359TRF

TOP VIEW

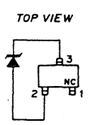


RD39ES-B2
RD8.2ESB3

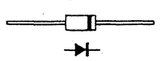


RD4.3M-B2
RD8.2M-B

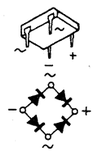
TOP VIEW



RG4C
RU3AM

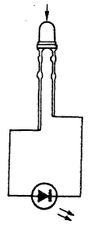


S1WB60B



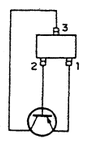
SLR-34MG3F

RADIATION SIDE

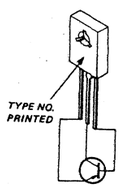


2SA1162

TOP VIEW



2SA1220A



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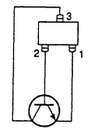
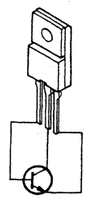
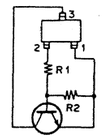


2SC4304



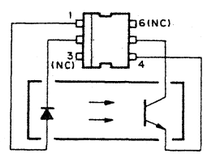
DTC114EKA

TOP VIEW



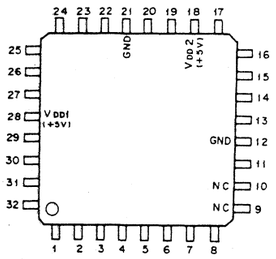
TLP732

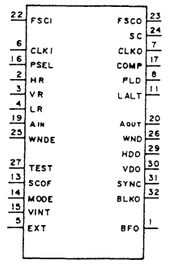
TOP VIEW



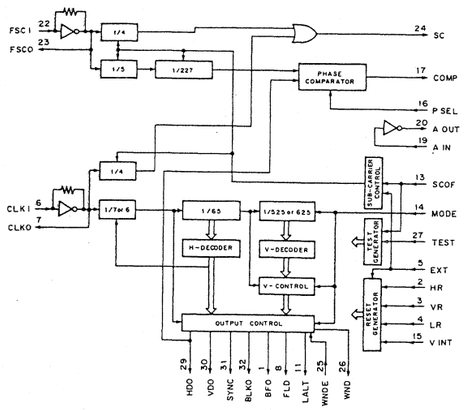
CXD1159Q (SONY)

C-MOS SYNC GENERATOR
– TOP VIEW –





PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL	PIN NO.	I/O	SIGNAL
1	O	BFO	9	–	NC	17	O	COMP	25	I	WNDE
2	I	HR	10	–	NC	18	–	VDD2(+5V)	26	O	WND
3	I	VR	11	O	LALT	19	I	AIN	27	I	TEST
4	I	LR	12	–	GND	20	O	AOUT	28	–	VDD1(+5V)
5	I	EXT	13	I	SCOF	21	–	GND	29	O	HDO
6	I	CLKI	14	I	MODE	22	I	FSCI	30	O	VDO
7	O	CLKO	15	I	VINT	23	O	FSCO	31	O	SYNC
8	O	FLD	16	I	PSEL	24	O	SC	32	O	BLKO



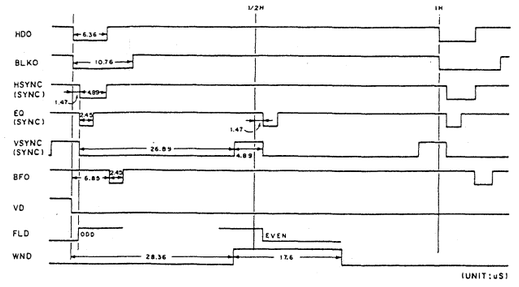
INPUT

AIN	; FILTER INVERTER INPUT
CLKI	; CLOCK INPUT (NTSC ; 14.31818MHz /PAL ; 14.1875MHz)
EXT	; INT./EXT (L ; INT)
FSCI	; 4FSC CLOCK INPUT
HR	; H RESET
LR	; LALT RESET
MODE	; NTSC/PAL (L ; NTSC)
PSEL	; POLARITY SELECT FOR PHASE COMP
SCOF	; SUBCARRIER OFF (L ; OFF)
TEST	; TEST INPUT
VINT	; INITIALIZE
VR	; V RESET
WNDE	; WINDOW ENABLE

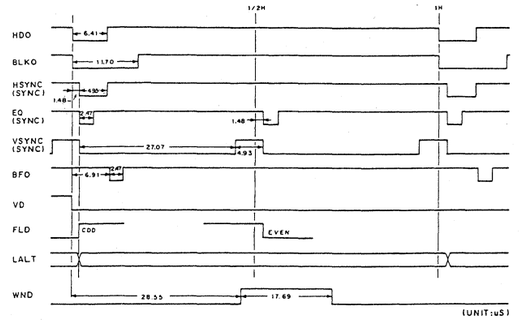
OUTPUT

AOUT	; FILTER INVERTER OUTPUT
BFO	; BURST FLAG PULSE
BLKO	; COMPOSITE BLANKING PULSE
CLKO	; CLOCK OUTPUT
COMP	; PHASE COMP
FLD	; FIELD PULSE
FSCO	; 4FSC CLOCK OUTPUT
HDO	; H DRIVE PULSE
LALT	; LINE ALTERNATE PULSE
SC	; SUBCARRIER
SYNC	; COMPOSITE SYNC PULSE
VDO	; V DRIVE PULSE
WND	; WINDOW

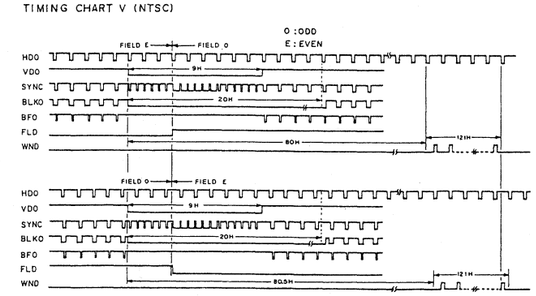
TIMING CHART H (NTSC)



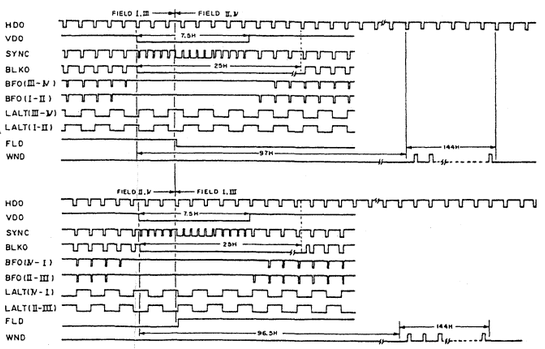
TIMING CHART H (PAL)



TIMING CHART V (NTSC)

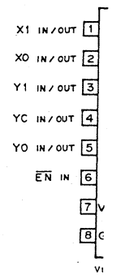


TIMING CHART V (PAL)



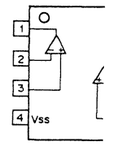
HD14058BFP (

C-MOS TRIPLE
– TOP VIEW –



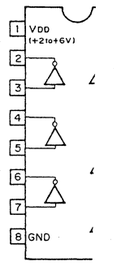
MC14577CF (M

C-MOS DUAL VI
– TOP VIEW –



MC74HC4049F

C-MOS HEX BU
– TOP VIEW –

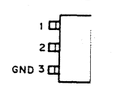


TC7SU04F (

C-MOS INV

(SCALE

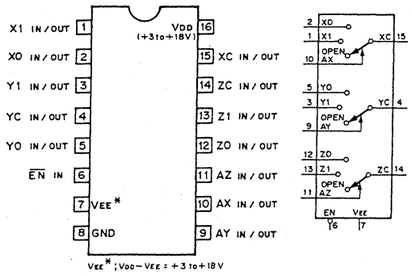
TOP VIE



TYPE
7S04F
7SU04F
4S69F
4SU69F
7SH04F

HD14058BFP (HITACHI) FLAT PACKAGE

C-MOS TRIPLE 2-CHANNEL ANALOG MULTIPLEXERS/DEMULTIPLEXERS
– TOP VIEW –



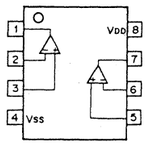
VEE*; VDD – VEE = +3 to +18 V

CONT. INPUTS		ON
EN	A (X,Y,Z,)	CHANNEL
0	0	0
0	1	1
1	X	OPEN

0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE.

MC14577CF (MOTOROLA) FLAT PACKAGE

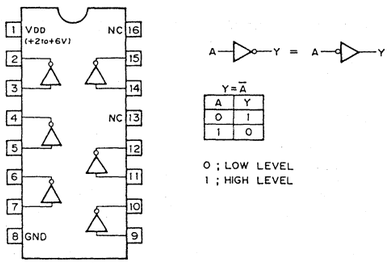
C-MOS DUAL VIDEO AMPLIFIERS
– TOP VIEW –



*VDD + | VSS | = +5V to +12V

MC74HC4049F (MOTOROLA) FLAT PACKAGE

C-MOS HEX BUFFER/CONVERTER (INVERTING)
– TOP VIEW –



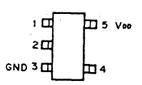
A	Y
0	1
1	0

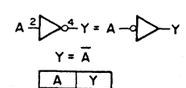
0; LOW LEVEL
1; HIGH LEVEL

TC7SU04F (TOSHIBA) CHIP PACKAGE

C-MOS INVERTER

(SCALE 6/1)
TOP VIEW





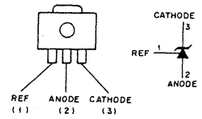
A	Y
0	1
1	0

0; LOW LEVEL
1; HIGH LEVEL

TYPE	VDD
7S04F 7SU04F	+2 to +6V
4S69F 4SU69F	+3 to +18V
7SH04FU	+2 to +5.5V

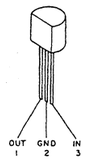
NJM431U (JRC)

ADJUSTABLE PRECISION SHUNT REGULATOR
– FRONT VIEW –



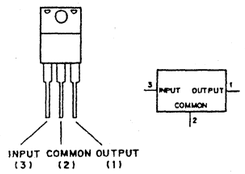
NJM78L05A (JRC) +5V (100mA)

POSITIVE VOLTAGE REGULATOR



NJM78M09FA (JRC) +9V (0.5A)

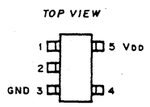
POSITIVE VOLTAGE REGULATOR
– FRONT VIEW –

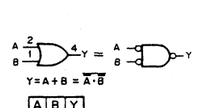


SC7S32F (MOTOROLA) CHIP PACKAGE

C-MOS 2-INPUT OR GATE

TOP VIEW





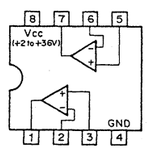
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	1

0; LOW LEVEL
1; HIGH LEVEL

TYPE	VDD
7S32F 7S32FU	+2 to +6V
4S71F	+3 to +18V
7SH32FU	−2 to +5.5V

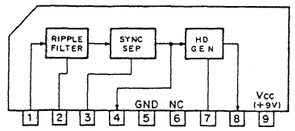
UPC393G2 (NEC) FLAT PACKAGE

DUAL VOLTAGE COMPARATORS
– TOP VIEW –



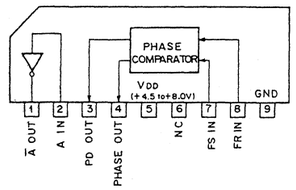
TA7357AP (TOSHIBA)

SYNC SEPARATOR/HD PULSE GENERATOR
— SIDE VIEW —

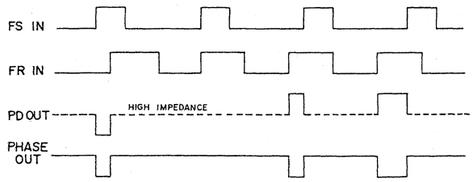


TC5081AP (TOSHIBA)

C-MOS PHASE COMPARATOR
— SIDE VIEW —

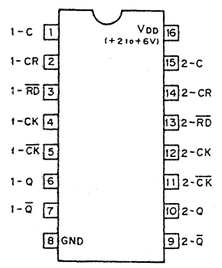


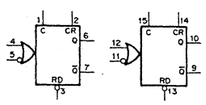
PHASE COMPARATOR TIMING CHART

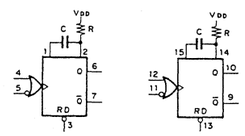


TC74HC4538AF (TOSHIBA) FLAT PACKAGE

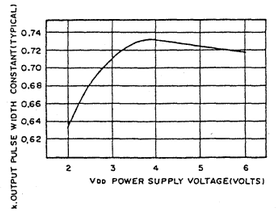
C - MOS DUAL RETRIGGERABLE / NON - RETRIGGERABLE MONOSTABLE MULTIVIBRATOR
– TOP VIEW –



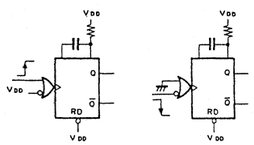




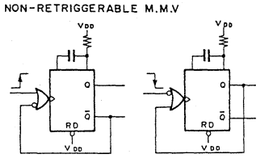
OUTPUT PULSE WIDTH = k·C·R



RETRIGGERABLE M.M.V

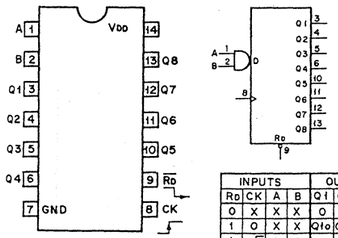


NON-RETRIGGERABLE M.M.V



TC74HC164AF (TOSHIBA) FLAT PACKAGE

C-MOS 8-BIT SERIAL-IN/PARALLEL-OUT SHIFT REGISTER
– TOP VIEW –

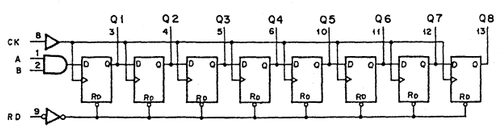


NOTE :

TYPE	VDD
AC/VHC	+2 to +5.5V
HC	+2 to +6V
HCT	+5V

INPUTS				OUTPUTS			
RD	CK	A	B	Q1	Q2	----	Q8
0	X	X	X	0	0	0	0
1	0	X	X	Q1o	Q2o	----	Q8o
1	↑	1	1	1	Q1n	----	Q7n
1	↑	0	X	0	Q1n	----	Q7n
1	↑	X	0	0	Q1n	----	Q7n

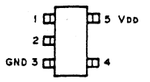
0; LOW LEVEL
1; HIGH LEVEL
X; DON'T CARE

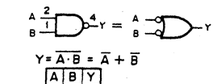


TC7S00F (TOSHIBA) CHIP PACKAGE

C-MOS 2-INPUT NAND GATE

(SCALE 6/1)
TOP VIEW





A	B	Y
0	0	1
0	1	1
1	0	1
1	1	0

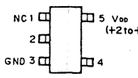
0; LOW LEVEL
1; HIGH LEVEL

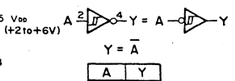
TYPE	VDD
7S00F 7S00FU	+2 to +6V
4S11F 4SU11F	+3 to +18V
7SH00FU	+2 to +5.5V

TC7S14F (TOSHIBA) CHIP PACKAGE

C-MOS SCHMITT INVERTER

(SCALE 6/1)
TOP VIEW





A	Y
0	1
1	0

0; LOW LEVEL
1; HIGH LEVEL

SECTION 5
REPAIR PARTS

【NOTE】

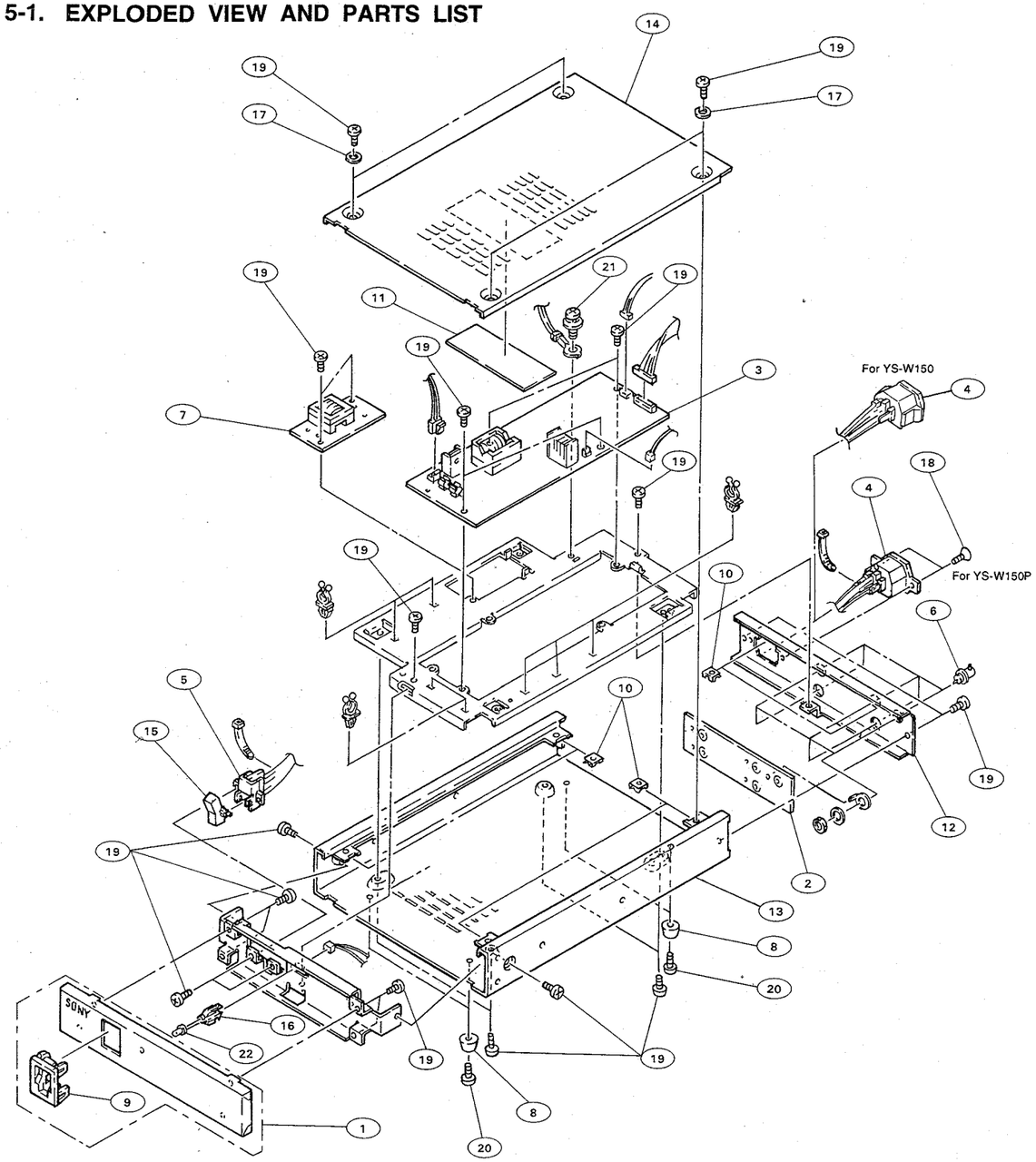
· Items with no part number and no description are not stocked because they are seldom required for routine service.

· All resistors are in ohms.

· Items marked "o" in the SP column are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by mark ⚠ are critical for safety. Replace only with part number specified.

5-1. EXPLODED VIEW AND PARTS LIST



No.	Part No.	SP	Description
1	A-8272-282-A	s	SUB ASSY, FRONT PANEL
2	A-8272-284-A	o	MOUNTED CIRCUIT BOARD, CN-1125B
3	A-8272-288-A	o	MOUNTED CIRCUIT BOARD, PS-376N2 :YS-W150
	A-8272-295-A	o	MOUNTED CIRCUIT BOARD, PS-376P1 :YS-W150P
4	⚠1-251-381-11	s	INLET, AC (3P) :YS-W150P
	⚠1-526-954-11	s	INLET, AC :YS-W150
5	⚠1-570-384-11	s	SWITCH, SEESAW (AC POWER)
6	1-580-724-21	s	CONNECTOR, BNC "CAMERA IN" "VIDEO OUT1" "VIDEO OUT2" "SYNC IN" "SYNC OUT"
7	1-659-052-11	o	PRINTED CIRCUIT BOARD, AC-173
8	2-092-326-99	s	FOOT, RUBBER
9	3-182-406-01	o	GUARD, POWER SW
10	3-189-523-01	o	SPRING, PLATE
11	3-189-524-01	s	INSULATOR
12	3-189-528-01	s	PANEL, REAR
13	3-189-532-01	s	CASE, LOWER
14	3-189-533-01	s	CASE, UPPER
15	3-688-814-11	s	CAP, SWITCH
16	4-348-208-00	o	HOLDER, LED
17	7-623-308-07	s	LW 3; TYPE (A) :YS-W150
18	7-682-248-09	s	SCREW +K 3X8 :YS-W150P
19	7-682-546-04	s	SCREW +B 3X5
20	7-682-548-09	s	SCREW +B 3X8
21	7-682-961-01	s	SCREW +PSW 4X8
22	8-719-980-40	s	DIODE SLR-34MG3F

5-2. ELECTRICAL PARTS LIST

AC-173 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	1-659-052-11	o	PRINTED CIRCUIT BOARD, AC-173
C601	⚠1-136-212-12	s	FILM 0.1uF 20% 250V
LF601	⚠1-429-354-11	s	TRANSFORMER, LINE FILTER
R601	1-202-719-00	s	COMP 1M 10% 1/2W [for YS-W150P]

CN-1125 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8272-284-A	o	MOUNTED CIRCUIT BOARD, CN-1125B
CN306	1-955-411-11	o	HARNESS, SUB
CN307	1-955-410-11	o	HARNESS, SUB
D301	8-719-110-78	s	DIODE RD33ES-B2
D302	8-719-110-09	s	DIODE RD8.2ES-B3
D303	8-719-110-09	s	DIODE RD8.2ES-B3
D304	8-719-110-09	s	DIODE RD8.2ES-B3
D305	8-719-110-09	s	DIODE RD8.2ES-B3
D306	8-719-110-09	s	DIODE RD8.2ES-B3
D307	8-719-110-09	s	DIODE RD8.2ES-B3
R301	1-247-804-11	s	CARBON 75 5% 1/4W
S301	1-570-056-11	s	SWITCH, SLIDE
S303	1-571-738-11	s	SWITCH, SLIDE
S304	1-571-738-11	s	SWITCH, SLIDE

PS-376 BOARD

Ref. No. or Q'ty	Part No.	SP	Description
1pc	A-8272-288-A	o	MOUNTED CIRCUIT BOARD, PS-376N2 [for YS-W150]
1pc	A-8272-295-A	o	MOUNTED CIRCUIT BOARD, PS-376P1 [for YS-W150P]
1pc	⚠1-532-738-11	o	FUSE, GLASS TUBE 0.63A 125V [for YS-W150]
1pc	⚠1-576-229-31	s	FUSE (H.B.C.) 2.5A 250V [for YS-W150P]
1pc	4-363-146-00	o	HEAT SINK, V.OUT
1pc	3-334-236-01	s	INSULATOR, TO-220
2pcs	7-682-546-04	s	SCREW +B 3X5
C101	1-126-964-11	s	ELECT 10uF 20% 50V
C102	1-126-967-11	s	ELECT 47uF 20% 50V
C103	1-163-251-11	s	CERAMIC 100PF 5% 50V
C104	1-126-967-11	s	ELECT 47uF 20% 50V
C105	1-163-222-11	s	CERAMIC 5PF 0.50PF 50V
C106	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C107	1-163-125-00	s	CERAMIC, CHIP 220PF 5% 50V
C108	1-126-967-11	s	ELECT 47uF 20% 50V
C109	1-163-038-91	s	CERAMIC 0.1uF 25V
C110	1-163-239-11	s	CERAMIC, CHIP 33PF 5% 50V
C111	1-163-038-91	s	CERAMIC 0.1uF 25V
C112	1-163-257-11	s	CERAMIC 180PF 5% 50V
C113	1-163-038-91	s	CERAMIC 0.1uF 25V
C114	1-163-131-00	s	CERAMIC, CHIP 390PF 5% 50V
C115	1-126-967-11	s	ELECT 47uF 20% 50V
C116	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C117	1-124-903-11	s	ELECT 1uF 20% 50V
C118	1-163-245-11	s	CERAMIC 56PF 5% 50V
C119	1-126-933-11	s	ELECT 100uF 20% 16V
C120	1-124-903-11	s	ELECT 1uF 20% 50V
C121	1-126-964-11	s	ELECT 10uF 20% 50V
C122	1-126-933-11	s	ELECT 100uF 20% 16V
C123	1-124-903-11	s	ELECT 1uF 20% 50V
C124	1-163-243-11	s	CERAMIC, CHIP 47PF 5% 50V
C201	1-124-464-11	s	ELECT 0.22MF 20% 50V
C202	1-164-004-11	s	CERAMIC, CHIP 0.1uF 10% 25V
C203	1-163-134-00	s	CERAMIC 510PF 5% 50V
C204	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C205	1-163-134-00	s	CERAMIC 510PF 5% 50V
C206	1-163-038-91	s	CERAMIC 0.1uF 25V
C207	1-126-965-11	s	ELECT 22uF 20% 50V
C208	1-126-967-11	s	ELECT 47uF 20% 50V
C209	1-126-151-11	s	ELECT, NONPOLAR 4.7uF 20% 16V
C210	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C211	1-163-038-91	s	CERAMIC 0.1uF 25V
C213	1-163-275-11	s	CERAMIC, CHIP 0.001uF 5% 50V
C214	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C215	1-163-220-11	s	CERAMIC 3PF 0.25PF 50V
C216	1-163-231-11	s	CERAMIC 15PF 5% 50V
C217	1-163-113-00	s	CERAMIC, CHIP 68PF 5% 50V
C218	1-126-964-11	s	ELECT 10uF 20% 50V
C219	1-163-038-91	s	CERAMIC 0.1uF 25V
C221	1-163-038-91	s	CERAMIC 0.1uF 25V
C222	1-124-903-11	s	ELECT 1uF 20% 50V
C223	1-163-038-91	s	CERAMIC 0.1uF 25V
C224	1-126-964-11	s	ELECT 10uF 20% 50V
C225	1-163-038-91	s	CERAMIC 0.1uF 25V
C226	1-163-089-00	s	CERAMIC, CHIP 6PF 50V

(PS-376 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
C227	1-163-245-11	s	CERAMIC 56PF 5% 50V
C231	1-163-038-91	s	CERAMIC 0.1uF 25V
C232	1-163-133-00	s	CERAMIC, CHIP 470PF 5% 50V
C233	1-163-133-00	s	CERAMIC, CHIP 470PF 5% 50V
C234	1-163-038-91	s	CERAMIC 0.1uF 25V
C235	1-126-964-11	s	ELECT 10uF 20% 50V
C236	1-163-038-91	s	CERAMIC 0.1uF 25V
C237	1-163-121-00	s	CERAMIC, CHIP 150PF 5% 50V
C238	1-163-275-11	s	CERAMIC, CHIP 0.001uF 5% 50V
C240	1-126-964-11	s	ELECT 10uF 20% 50V
C241	1-163-038-91	s	CERAMIC 0.1uF 25V
C242	1-126-964-11	s	ELECT 10uF 20% 50V
C243	1-163-038-91	s	CERAMIC 0.1uF 25V
C244	1-124-767-00	s	ELECT, NONPOLAR 2.2uF 20% 50V
C245	1-163-038-91	s	CERAMIC 0.1uF 25V
C246	1-104-563-11	s	FILM 0.1uF 5% 16V
C247	1-164-232-11	s	CERAMIC, CHIP 0.01uF 10% 50V
C301	1-126-952-11	s	ELECT 1000uF 20% 35V
C302	1-126-965-11	s	ELECT 22uF 20% 50V
C304	1-104-664-11	s	ELECT 47uF 20% 25V
C307	1-126-964-11	s	ELECT 10uF 20% 50V
C308	1-165-319-11	s	CERAMIC, CHIP 0.1uF 50V
C309	1-107-909-11	s	ELECT 47uF 20% 50V
C310	1-163-145-00	s	CERAMIC, CHIP 0.0015uF 5% 50V
C313	1-126-933-11	s	ELECT 100uF 20% 16V
C501	⚠1-136-212-12	s	FILM 0.1uF 20% 250V
C502	⚠1-113-900-11	s	CERAMIC 470PF 10% 250V [for YS-W150]
C503	⚠1-113-900-11	s	CERAMIC 470PF 10% 250V [for YS-W150]
C504	⚠1-113-900-11	s	CERAMIC 470PF 10% 250V
C505	1-107-965-51	s	ELECT 100uF 20% 250V [for YS-W150]
C505	1-110-665-51	s	ELECT 47uF 20% 400V [for YS-W150P]
C506	1-163-809-11	s	CERAMIC, CHIP 0.047uF 10% 25V
C507	1-136-205-11	s	FILM 0.022uF 5% 630V
C508	1-104-760-11	s	CERAMIC, CHIP 0.047uF 10% 50V
C509	1-126-964-11	s	ELECT 10uF 20% 50V
C510	1-126-941-11	s	ELECT 470uF 20% 25V
C511	1-126-933-11	s	ELECT 100uF 20% 16V
C512	1-126-967-11	s	ELECT 47uF 20% 50V
C513	1-107-914-11	s	ELECT 1000uF 20% 50V
C514	1-107-914-11	s	ELECT 1000uF 20% 50V
C515	1-126-963-11	s	ELECT 4.7uF 20% 50V
C516	1-163-017-00	s	CERAMIC, CHIP 0.0047uF 5% 50V
C517	1-107-965-51	s	ELECT 100uF 20% 250V [for YS-W150]
C517	1-110-665-51	s	ELECT 47uF 20% 400V [for YS-W150P]
C518	1-163-038-91	s	CERAMIC 0.1uF 25V
C519	1-163-038-91	s	CERAMIC 0.1uF 25V
C522	1-163-038-91	s	CERAMIC 0.1uF 25V
CN101	1-564-009-11	o	CONNECTOR 10P, MALE
CN102	1-564-004-11	o	CONNECTOR 5P, MALE
CN103	1-564-321-00	s	CONNECTOR 2P, MALE
CN105	1-564-001-11	o	CONNECTOR, 2P, MALE
CT201	1-141-442-91	s	CAP, TRIMMER 20PF
CT202	1-141-442-91	s	CAP, TRIMMER 20PF
D101	8-719-157-42	s	DIODE RD8.2M-B
D102	8-719-801-48	s	DIODE 1SS193
D103	8-719-157-42	s	DIODE RD8.2M-B

(PS-376 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
D201	8-719-031-68	s	DIODE HVU359TRF
D301	8-719-801-48	s	DIODE 1SS193
D302	8-719-801-78	s	DIODE 1SS184
D304	8-719-801-48	s	DIODE 1SS193
D501	8-719-510-43	s	DIODE S1WB60B
D502	8-719-801-48	s	DIODE 1SS193
D503	8-719-302-98	s	DIODE RG4C
D504	8-719-801-48	s	DIODE 1SS193
D505	8-719-105-64	s	DIODE RD4.3M-B2
D506	8-719-801-48	s	DIODE 1SS193
D507	8-719-300-33	s	DIODE RU-3AM
D508	8-719-300-33	s	DIODE RU-3AM
D509	8-719-300-33	s	DIODE RU-3AM
D512	8-719-801-48	s	DIODE 1SS193
D513	8-719-110-88	s	DIODE RD39ESB2
FH501	1-533-213-31	o	HOLDER, FUSE
FH502	1-533-213-31	o	HOLDER, FUSE
IC101	8-759-262-03	s	IC MC14577CF
IC102	8-759-262-03	s	IC MC14577CF
IC201	8-759-201-47	s	IC TA7357AP
IC202	8-759-250-81	s	IC TC5081AP
IC203	8-759-008-36	s	IC MC74HC4049F
IC204	8-759-708-05	s	IC NJM78L05A
IC205	8-759-084-80	s	IC TC7S14F-TE85L
IC206	8-759-231-32	s	IC TC7S00F
IC207	8-759-231-32	s	IC TC7S00F
IC208	8-759-231-32	s	IC TC7S00F
IC209	8-759-243-19	s	IC TC7SU04F
IC211	8-759-239-34	s	IC TC74HC4538AF
IC212	8-752-326-08	s	IC CXD1159Q
IC213	8-759-084-80	s	IC TC7S14F-TE85L
IC214	8-759-243-19	s	IC TC7SU04F
IC215	8-759-300-71	s	IC HD14053BFP
IC216	8-759-035-93	s	IC SC7S32F
IC301	8-759-100-93	s	IC UPC393G2
IC501	8-759-701-59	s	IC NJM78M09FA
IC503	8-759-710-88	s	IC NJM431U
L201	1-410-381-11	s	INDUCTOR CHIP 10uH
L202	1-412-030-11	s	INDUCTOR CHIP 22uH
L203	1-412-030-11	s	INDUCTOR CHIP 22uH
L204	1-412-030-11	s	INDUCTOR CHIP 22uH
L205	1-412-030-11	s	INDUCTOR CHIP 22uH
L206	1-412-030-11	s	INDUCTOR CHIP 22uH
L301	1-410-626-11	s	COIL, CHOKE 47uH
L501	1-412-529-81	s	INDUCTOR 22uH
L502	1-412-529-81	s	INDUCTOR 22uH
L503	1-412-529-81	s	INDUCTOR 22uH
L504	1-412-529-81	s	INDUCTOR 22uH
PH501	⚠8-749-925-12	s	PHOTO COUPLER TLP732-D4-GR-LF2
PH503	⚠8-749-925-12	s	PHOTO COUPLER TLP732-D4-GR-LF2
Q101	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q102	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q103	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q104	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q201	8-729-216-22	s	TRANSISTOR 2SA1162
Q202	8-729-216-22	s	TRANSISTOR 2SA1162
Q205	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6

(PS-376 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
Q301	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q302	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q303	8-729-216-22	s	TRANSISTOR 2SA1162
Q304	8-729-122-03	s	TRANSISTOR 2SA1220A-P
Q305	8-729-216-22	s	TRANSISTOR 2SA1162
Q306	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q307	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q308	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q309	8-729-216-22	s	TRANSISTOR 2SA1162
Q312	8-729-900-53	s	TRANSISTOR DTC114EK
Q501	8-729-216-22	s	TRANSISTOR 2SA1162
Q502	8-729-322-54	s	TRANSISTOR 2SC4304
Q503	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
Q504	8-729-120-28	s	TRANSISTOR 2SC1623-L5L6
R101	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R102	1-216-093-00	s	METAL, CHIP 68K 5% 1/10W
R103	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R104	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R105	1-216-022-00	s	METAL, CHIP 75 5% 1/10W
R106	1-208-775-11	s	METAL, CHIP 510 0.50% 1/10W
R107	1-208-775-11	s	METAL, CHIP 510 0.50% 1/10W
R108	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R109	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R110	1-216-001-00	s	METAL, CHIP 10 5% 1/10W
R111	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R112	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R113	1-216-057-00	s	METAL, CHIP 2.2K 5% 1/10W
R114	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R115	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R116	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R117	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R118	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R119	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R120	1-216-031-00	s	METAL, CHIP 180 5% 1/10W
R121	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R122	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R123	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R124	1-216-021-00	s	METAL, CHIP 68 5% 1/10W
R125	1-216-047-00	s	METAL, CHIP 820 5% 1/10W
R126	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R127	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R128	1-208-771-11	s	METAL, CHIP 360 0.50% 1/10W
R129	1-216-022-00	s	METAL, CHIP 75 5% 1/10W
R130	1-216-037-00	s	METAL, CHIP 330 5% 1/10W
R131	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R132	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R133	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R134	1-216-022-00	s	METAL, CHIP 75 5% 1/10W
R201	1-218-755-11	s	METAL 130K 0.50% 1/10W
R202	1-216-113-00	s	METAL, CHIP 470K 5% 1/10W
R203	1-216-095-00	s	METAL, CHIP 82K 5% 1/10W
R204	1-216-075-00	s	METAL, CHIP 12K 5% 1/10W
R205	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R206	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R207	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R208	1-216-065-00	s	METAL, CHIP 4.7K 5% 1/10W
R209	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R210	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R211	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W

(PS-376 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R212	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R213	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R214	1-216-097-00	s	METAL, CHIP 100K 5% 1/10W
R215	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R216	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R218	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R220	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R221	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R222	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R223	1-216-059-00	s	METAL, CHIP 2.7K 5% 1/10W
R224	1-216-045-00	s	METAL, CHIP 680 5% 1/10W
R230	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R231	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R232	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W [for YS-W150P]
R233	1-216-295-00	s	METAL, CHIP 0-OHM [for YS-W150]
R234	1-216-077-00	s	METAL, CHIP 15K 5% 1/10W
R235	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R236	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R237	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R238	1-216-027-00	s	METAL, CHIP 120 5% 1/10W
R239	1-216-121-00	s	METAL, CHIP 1M 5% 1/10W
R241	1-216-295-00	s	METAL, CHIP 0-OHM
R242	1-216-699-11	s	METAL, CHIP 100K 0.5% 1/10W [for YS-W150]
R242	1-218-755-11	s	METAL 130K 0.50% 1/10W [for YS-W150P]
R243	1-216-079-00	s	METAL, CHIP 18K 5% 1/10W
R244	1-216-295-00	s	METAL, CHIP 0-OHM
R246	1-216-295-00	s	METAL, CHIP 0-OHM
R247	1-216-295-00	s	METAL, CHIP 0-OHM
R248	1-216-295-00	s	METAL, CHIP 0-OHM
R249	1-216-295-00	s	METAL, CHIP 0-OHM
R250	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R251	1-216-025-00	s	METAL, CHIP 100 5% 1/10W
R301	1-216-295-00	s	METAL, CHIP 0-OHM
R302	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R303	1-249-426-11	s	CARBON 5.6K 5% 1/4W
R304	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R305	1-208-822-11	s	METAL, CHIP 47K 0.50% 1/10W
R306	1-208-800-11	s	METAL, CHIP 5.6K 0.50% 1/10W
R307	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R308	1-249-381-11	s	CARBON 1 5% 1/4W
R309	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R310	1-216-029-00	s	METAL, CHIP 150 5% 1/10W
R311	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R312	1-216-083-00	s	METAL, CHIP 27K 5% 1/10W
R313	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W
R314	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R315	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R316	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R317	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R318	1-216-061-00	s	METAL, CHIP 3.3K 5% 1/10W
R319	1-216-073-00	s	METAL, CHIP 10K 5% 1/10W
R320	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R321	1-216-105-00	s	METAL, CHIP 220K 5% 1/10W
R322	1-216-689-11	s	METAL, CHIP 39K 0.5% 1/10W
R323	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R324	1-216-081-00	s	METAL, CHIP 22K 5% 1/10W

(PS-376 BOARD)

Ref. No. or Q'ty	Part No.	SP	Description
R332	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R333	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R339	1-218-758-11	s	METAL 180K 0.50% 1/10W
R501	1-205-631-00	s	WIREWOUND 15 5% 5W [for YS-W150]
R501	1-205-760-11	s	WIREWOUND 10 10% 5W [for YS-W150P]
R502	1-216-349-00	s	METAL OXIDE 1 5% 1W [for YS-W150]
R502	1-216-354-11	s	METAL 2.7 5% 1W [for YS-W150P]
R503	1-215-904-11	s	METAL 100K 5% 2W
R504	1-216-033-00	s	METAL, CHIP 220 5% 1/10W [for YS-W150]
R504	1-216-035-00	s	METAL, CHIP 270 5% 1/10W [for YS-W150P]
R505	1-215-927-00	s	METAL 47K 5% 3W [for YS-W150]
R505	1-215-929-11	s	METAL 100K 5% 3W [for YS-W150P]
R506	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R507	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R508	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R509	1-216-085-00	s	METAL, CHIP 33K 5% 1/10W
R510	1-216-049-00	s	METAL, CHIP 1K 5% 1/10W
R511	1-216-053-00	s	METAL, CHIP 1.5K 5% 1/10W
R512	1-216-089-00	s	METAL, CHIP 47K 5% 1/10W
R513	1-208-812-11	s	METAL, CHIP 18K 0.50% 1/10W
R514	1-216-678-11	s	METAL, CHIP 13K 0.5% 1/10W
R515	1-215-894-11	s	METAL 2.2K 5% 2W
R516	1-208-784-11	s	METAL, CHIP 1.2K 0.50% 1/10W
R517	1-215-894-11	s	METAL 2.2K 5% 2W
R518	1-216-033-00	s	METAL, CHIP 220 5% 1/10W [for YS-W150]
R519	1-215-904-11	s	METAL 100K 5% 2W [for YS-W150P]
R520	1-215-929-11	s	METAL 100K 5% 3W [for YS-W150P]
R521	1-216-051-00	s	METAL, CHIP 1.2K 5% 1/10W
R527	1-215-927-00	s	METAL 47K 5% 3W [for YS-W150]
R527	1-215-929-11	s	METAL 100K 5% 3W [for YS-W150P]
RV201	1-241-766-11	s	RES, ADJ, METAL 47K
T501	⚠1-429-352-11	s	TRANSFORMER, DC-DC CONVERTER [for YS-W150]
T501	⚠1-429-353-11	s	TRANSFORMER, DC-DC CONVERTER [for YS-W150P]
X201	1-567-866-11	s	CRYSTAL, 14.31818MHz [for YS-W150]
X201	1-760-456-11	s	CRYSTAL (VCO) 14.1875MHz [for YS-W150P]

FRAME

Ref. No. or Q'ty	Part No.	SP	Description
1pc	⚠1-570-384-11	s	SWITCH, ROCKER (AC POWER)
1pc	8-719-980-40	s	DIODE SLR-34MG3F
1pc	⚠1-251-381-11	s	INLET, AC (3P) [for YS-W150P]
1pc	⚠1-526-954-11	s	INLET, AC [for YS-W150]
CN301	1-580-724-21	s	CONNECTOR, BNC "CAMERA IN"
CN302	1-580-724-21	s	CONNECTOR, BNC "VIDEO OUT1"
CN303	1-580-724-21	s	CONNECTOR, BNC "VIDEO OUT2"
CN304	1-580-724-21	s	CONNECTOR, BNC "SYNC IN"
CN305	1-580-724-21	s	CONNECTOR, BNC "SYNC OUT"

PACKING MATERIALS & SUPPLIED ACCESSORIES

Ref. No. or Q'ty	Part No.	SP	Description
1pc	⚠1-534-827-14	s	CORD, POWER [for YS-W150]
1pc	⚠1-590-910-21	s	CORD SET, POWER [for YS-W150P]
1pc	⚠3-810-222-11	s	MANUAL, INSTRUCTION